**Test case 1 SPARQL Query**

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX drugbank: <http://www4.wiwiss.fu-berlin.de/drugbank/resource/drugbank/>

PREFIX dc: <http://purl.org/dc/1.1#>

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX dbpedia3: <http://dbpedia.org/property/>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX pubmed: <http://linkedlifedata.com/resource/pubmed/>

PREFIX ctec: <http://eurecaproject.eu/ctec/>

PREFIX skos: <http://www.w3.org/2004/02/skos/core#>

PREFIX mukg: <http://ztonebv.com/MUKG#>

PREFIX meshv: <http://id.nlm.nih.gov/mesh/vocab#>

PREFIX mesh: <http://id.nlm.nih.gov/mesh/>

SELECT DISTINCT ?g ?cuiG ?m

WHERE{

{?s1 mukg:hasNeurotransmitter mukg:Serotonin;

mukg:hasGutMicrobiota ?g;

mukg:hasModulateType ?m.

?g umls:cui ?cuiG}

FILTER EXISTS

{?s2 mukg:hasNeurotransmitter mukg:Dopamine;

mukg:hasGutMicrobiota ?g;

mukg:hasModulateType ?m.}

}

**Test case 1 SPARQL Query Results**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **g** | **cuiG** | **m** |
| **1** | [**mukg:Bacillus-cereus**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacillus-cereus) | **C0004590** | **Increase** |
| **2** | [**mukg:Burkholderia-oklahomensis**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Burkholderia-oklahomensis) | **C1898603** | **Increase** |
| **3** | [**mukg:Lactobacillus-plantarum**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Lactobacillus-plantarum) | **C0317608** | **Increase** |
| **4** | [**mukg:Hafnia-alvei**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Hafnia-alvei) | **C0315259** | **Increase** |
| **5** | [**mukg:Klebsiella-pneumoniae**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Klebsiella-pneumoniae) | **C0001699** | **Increase** |
| **6** | [**mukg:Morganella-morganii**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | **C0315276** | **Increase** |
| **7** | [**mukg:Escherichia-coli**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Escherichia-coli) | **C0014834** | **Increase** |
| **8** | [**mukg:Streptococcus-thermophilus**](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Streptococcus-thermophilus) | **C0318180** | **Increase** |

**Test Case 2 SPARQL Query**

PREFIX mesh2020: <http://id.nlm.nih.gov/mesh/2020/>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX mukg: <http://ztonebv.com/MUKG#>

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

SELECT DISTINCT ?g ?cuiG ?e ?a

WHERE{

{ mukg:Serotonin rdfs:label ?a.

?s1 mukg:hasNeurotransmitter mukg:Serotonin;

mukg:hasGutMicrobiota ?g;

mukg:hasEffectType ?e.

?g umls:cui ?cuiG.}

UNION

{mukg:Norepinephrine rdfs:label ?a.

?s2 mukg:hasNeurotransmitter mukg:Norepinephrine;

mukg:hasGutMicrobiota ?g;

mukg:hasEffectType ?e.

?g umls:cui ?cuiG.}

FILTER (lang(?a)='en')

}

**Test Case 2 SPARQL Query Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | g | cuiG | e | a |
| 1 | [mukg:Candida-albicans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Candida-albicans) | C0006837 | Inhibit | "Serotonin"@en |
| 2 | [mukg:Enterococcus-faecalis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Enterococcus-faecalis) | C0038404 | Promote | "Serotonin"@en |
| 3 | [mukg:Pichia-guilliermondii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Pichia-guilliermondii) | C0319552 | Promote | "Serotonin"@en |
| 4 | [mukg:Rhodospirillum-rubrum](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Rhodospirillum-rubrum) | C0035503 | Promote | "Serotonin"@en |
| 5 | [mukg:Saccharomyces-cerevisiae](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Saccharomyces-cerevisiae) | C0036025 | Promote | "Serotonin"@en |
| 6 | [mukg:Yersinia-enterocolitica](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Yersinia-enterocolitica) | C0043406 | Promote | "Norepinephrine"@en |
| 7 | [mukg:Salmonella-enterica](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Salmonella-enterica) | C0445750 | Promote | "Norepinephrine"@en |
| 8 | [mukg:Escherichia-coli](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Escherichia-coli) | C0014834 | Promote | "Norepinephrine"@en |
| 9 | [mukg:Pseudomonas-aeruginosa](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Pseudomonas-aeruginosa) | C0033809 | Promote | "Norepinephrine"@en |

**Test Case 3 SPARQL Query**

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX drugbank: <http://www4.wiwiss.fu-berlin.de/drugbank/resource/drugbank/>

PREFIX dc: <http://purl.org/dc/1.1#>

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX dbpedia3: <http://dbpedia.org/property/>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX pubmed: <http://linkedlifedata.com/resource/pubmed/>

PREFIX ctec: <http://eurecaproject.eu/ctec/>

PREFIX skos: <http://www.w3.org/2004/02/skos/core#>

PREFIX mukg: <http://ztonebv.com/MUKG#>

PREFIX meshv: <http://id.nlm.nih.gov/mesh/vocab#>

PREFIX mesh: <http://id.nlm.nih.gov/mesh/>

SELECT DISTINCT ?g ?m ?n

WHERE{

{?r1 mukg:hasMentalDisorder mukg:Cognition-disorders;

mukg:hasNeurotransmitter ?n.

?s mukg:hasNeurotransmitter ?n;

mukg:hasGutMicrobiota ?g;

mukg:hasModulateType ?m.}

FILTER EXISTS

{?r2 mukg:hasMentalDisorder mukg:Personality-disorder;

mukg:hasNeurotransmitter ?n.}

FILTER EXISTS

{?r3 mukg:hasMentalDisorder mukg:Sex-behavior-disorder;

mukg:hasNeurotransmitter ?n.}

}

**Test Case 3 SPARQL Query Results**

|  |  |  |  |
| --- | --- | --- | --- |
| g | m | n |  |
| 1 | [mukg:Bacillus-cereus](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacillus-cereus) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 2 | [mukg:Burkholderia-oklahomensis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Burkholderia-oklahomensis) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 3 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 4 | [mukg:Paenibacillus](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Paenibacillus) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 5 | [mukg:Lactobacillus-plantarum](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Lactobacillus-plantarum) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 6 | [mukg:Bacteroides-uniformis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-uniformis) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 7 | [mukg:Clostridium-ramosum](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Clostridium-ramosum) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 8 | [mukg:Hafnia-alvei](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Hafnia-alvei) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 9 | [mukg:Klebsiella-pneumoniae](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Klebsiella-pneumoniae) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 10 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 11 | [mukg:Escherichia-coli](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Escherichia-coli) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 12 | [mukg:Candida-albicans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Candida-albicans) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 13 | [mukg:Lactococcus-lactis-subsp-lactis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Lactococcus-lactis-subsp-lactis) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 14 | [mukg:Lactococcus-lactis-subsp-cremoris](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Lactococcus-lactis-subsp-cremoris) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |
| 15 | [mukg:Streptococcus-thermophilus](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Streptococcus-thermophilus) | Increase | [mukg:Serotonin](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Serotonin) |

**Test Case 4 SPARQL Query**

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX drugbank: <http://www4.wiwiss.fu-berlin.de/drugbank/resource/drugbank/>

PREFIX dc: <http://purl.org/dc/1.1#>

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX dbpedia3: <http://dbpedia.org/property/>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX pubmed: <http://linkedlifedata.com/resource/pubmed/>

PREFIX ctec: <http://eurecaproject.eu/ctec/>

PREFIX skos: <http://www.w3.org/2004/02/skos/core#>

PREFIX mukg: <http://ztonebv.com/MUKG#>

PREFIX meshv: <http://id.nlm.nih.gov/mesh/vocab#>

PREFIX mesh: <http://id.nlm.nih.gov/mesh/>

PREFIX umls: <http://bioportal.bioontology.org/ontologies/umls#>

SELECT DISTINCT ?l ?g ?d

WHERE{

{?r mukg:hasNeurotransmitter mukg:Histamine;

mukg:hasMentalDisorder ?d.

?s mukg:hasNeurotransmitter mukg:Histamine;

mukg:hasGutMicrobiota ?g;

mukg:hasModulateType ?m;

mukg:hasEvidenceLevel ?l.}

FILTER (?l<='b')

}

**Test Case 4 SPARQL Query Results**

|  |  |  |  |
| --- | --- | --- | --- |
| l | g | d |  |
| 1 | 2 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | [mukg:Anxiety-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Anxiety-disorders) |
| 2 | 2 | [mukg:Fusobacterium-varium](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-varium) | [mukg:Anxiety-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Anxiety-disorders) |
| 3 | 2 | [mukg:Fusobacterium-ulcerans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-ulcerans) | [mukg:Anxiety-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Anxiety-disorders) |
| 4 | 2 | [mukg:Bacteroides-fragilis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-fragilis) | [mukg:Anxiety-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Anxiety-disorders) |
| 5 | 2 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | [mukg:Anxiety-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Anxiety-disorders) |
| 6 | 2 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | [mukg:Depressive-disorder](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Depressive-disorder) |
| 7 | 2 | [mukg:Fusobacterium-varium](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-varium) | [mukg:Depressive-disorder](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Depressive-disorder) |
| 8 | 2 | [mukg:Fusobacterium-ulcerans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-ulcerans) | [mukg:Depressive-disorder](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Depressive-disorder) |
| 9 | 2 | [mukg:Bacteroides-fragilis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-fragilis) | [mukg:Depressive-disorder](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Depressive-disorder) |
| 10 | 2 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | [mukg:Depressive-disorder](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Depressive-disorder) |
| 11 | 2 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | [mukg:Sleep-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Sleep-disorders) |
| 12 | 2 | [mukg:Fusobacterium-varium](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-varium) | [mukg:Sleep-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Sleep-disorders) |
| 13 | 2 | [mukg:Fusobacterium-ulcerans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-ulcerans) | [mukg:Sleep-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Sleep-disorders) |
| 14 | 2 | [mukg:Bacteroides-fragilis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-fragilis) | [mukg:Sleep-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Sleep-disorders) |
| 15 | 2 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | [mukg:Sleep-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Sleep-disorders) |
| 16 | 2 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | [mukg:Eating-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Eating-disorders) |
| 17 | 2 | [mukg:Fusobacterium-varium](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-varium) | [mukg:Eating-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Eating-disorders) |
| 18 | 2 | [mukg:Fusobacterium-ulcerans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-ulcerans) | [mukg:Eating-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Eating-disorders) |
| 19 | 2 | [mukg:Bacteroides-fragilis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-fragilis) | [mukg:Eating-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Eating-disorders) |
| 20 | 2 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | [mukg:Eating-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Eating-disorders) |
| 21 | 2 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | [mukg:Autistic-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Autistic-disorders) |
| 22 | 2 | [mukg:Fusobacterium-varium](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-varium) | [mukg:Autistic-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Autistic-disorders) |
| 23 | 2 | [mukg:Fusobacterium-ulcerans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-ulcerans) | [mukg:Autistic-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Autistic-disorders) |
| 24 | 2 | [mukg:Bacteroides-fragilis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-fragilis) | [mukg:Autistic-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Autistic-disorders) |
| 25 | 2 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | [mukg:Autistic-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Autistic-disorders) |
| 26 | 2 | [mukg:Acinetobacter-baumannii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Acinetobacter-baumannii) | [mukg:Cognition-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Cognition-disorders) |
| 27 | 2 | [mukg:Fusobacterium-varium](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-varium) | [mukg:Cognition-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Cognition-disorders) |
| 28 | 2 | [mukg:Fusobacterium-ulcerans](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Fusobacterium-ulcerans) | [mukg:Cognition-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Cognition-disorders) |
| 29 | 2 | [mukg:Bacteroides-fragilis](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Bacteroides-fragilis) | [mukg:Cognition-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Cognition-disorders) |
| 30 | 2 | [mukg:Morganella-morganii](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Morganella-morganii) | [mukg:Cognition-disorders](http://localhost:7200/resource?uri=http%3A%2F%2Fztonebv.com%2FMUKG%23Cognition-disorders) |

FILTER regex(?treenumber, "^B03.")

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT \* WHERE {

?sub ?pred ?obj .

} LIMIT 10

PREFIX pubmed: <https://www.ncbi.nlm.nih.gov/pubmed>

PREFIX ztone: <http://www.ztonebv.nl/KG#>

PREFIX lldpubmed: <http://linkedlifedata.com/resource/pubmed/>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX ctec: <http://eurecaproject.eu/ctec/>

PREFIX skos: <http://www.w3.org/2004/02/skos/core#>

PREFIX mukg: <http://ztonebv.com/MUKG#>

PREFIX sct: <http://wasp.cs.vu.nl/sct/sct#>

PREFIX umls: <http://linkedlifedata.com/resource/umls/id/>

select distinct ?label (COUNT(?label) AS ?count)

where {

?s1 rdfs:subClassOf ?s2.

?s1 sct:hasEnglishPreferredLabel ?concept.

?s2 sct:hasEnglishPreferredLabel "Virus".

?s3 ztone:SenseURL ?s1.

?s4 ztone:hasSense ?s3.

?s5 ztone:hasSenses ?s4.

?s6 ztone:hasTerm ?s5.

?s6 ztone:hasLabel ?label.

}

GROUP BY ?label

ORDER BY DESC(?count)

From Zhisheng Huang to Everyone: 11:56 AM

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX dbpedia: <http://dbpedia.org/ontology/>

select distinct ?university

where {

?s rdfs:label ?university.

FILTER regex(?university,"China")

FILTER regex(?university,"University")

}

"Renmin University of China"@en